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ABSTRACT

An automated project for converting a library collection from Dewey Decimal to Library of Congress classification was compared with a manual reclassification project. The Joint University Libraries (JUL) of Vanderbilt University, George Peabody College for Teachers, and Scarrit College served as an example of manual reclassification. The JUL project processed 260,703 volumes, less than half of the total collection, in six years. Automated reclassification was studied at Western Kentucky University. In that project, a computer was used to maintain a master file and to print working lists, author-title book catalogs, labels, pockets, and circulation cards. An automated circulation system was developed as a by-product of the reclassification project. The project was finished in two years, having processed 390,000 volumes. Comparative cost data was not available for study. Nine suggestions from JUL for manual reclassification projects are included. (PF)

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A COMPARISON OF A MANUAL LIBRARY RECLASSIFICATION PROJECT

WITH

A COMPUTER AUTOMATED LIBRARY RECLASSIFICATION PROJECT

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Credits

A number of staff persons at each of the schools were involved in compiling information contained in this study. However, two people at each school should be given recognition for their special contributions. At the Joint Universities Library Eleanor F. Morrissey and Jean W. Wright furnished data and most of the comments quoted in the study. At Western Kentucky University Earl E. Wassom and Patricia W. Custead have supplied the information.

The emergence of automated library networks has brought a renewed interest to the matter of reclassification of collections from the Dewey Classification system to the Library of Congress classification system. There is some compulsion for all member libraries within a network to have a common classification and the LC system is the leading contender. The absolute necessity of this single system has not been established, but the trend is moving strongly in that direction.

If this trend continues, it will demand the reclassification of a significant number of libraries presently utilizing the Dewey Classification. Included in this list of libraries would be an assortment of large and small library collections varying from major universities down to some of the smaller schools.

Projects this extensive should base their operational procedures on the best experiential knowledge available. Unfortunately, there is a scarcity of literature available for persons contemplating the move.

Many reclassification projects have been completed manually. The work and frustrations implied in this task are enough to make librarians reluctant to consider the project. Materials must be pulled from the shelves, reclassified, manually processed for reshelving and separated from the remainder of the collection. New cards must be secured and filed. Handling of serials must be considered in relation to the needs of the local situation. During all of this, new purchases are arriving, and patrons are demanding service in the midst of the confusion.

Computer capabilities on which the automated networks are based suggest a partial solution. Given a data base that is sufficiently large, the computer can quickly provide the new LC numbers needed in reclassification, print the new cards and book pockets, and facilitate the acquisition and processing of new materials. Some of the processing must still be done manually and the general confusion of two collections in the process of shifting, space needs, and other associated problems will still be present.

This study was designed for the purpose of comparing an automated reclassification project with a manual reclassification project. Problems and assets peculiar to each local situation make comparisons difficult in some areas. Precise data is not always available in the exact areas covered by this investigation and estimations must be used. With these limitations, it is hoped that the general information presented will be helpful to a librarian contemplating questions of whether a reclassification project should be undertaken, possible method of approach, potential added costs to be incurred, additional labor needed, eventual benefits to be derived, etc.

Each of the libraries included in this study were asked to provide data and to make comments that would reflect special problems of the respective library, offer suggestions for other librarians, and cover general areas of interest.

PART I

The reclassification project of the Joint University Libraries (of Vanderbilt University, George Peabody College for Teachers, and Scarritt College) was used as an example of manual reclassification.

Rationale

JUL began reclassification before library automation reached its present level of sophistication. The necessity of the project was recognized as indicated by this statement of rationale.

"No library should decide to convert from one classification system to another without serious study and planning. There must be a very compelling reason for conversion since it brings with it much trouble. The JUL decided upon conversion for several very practical reasons:

- "A. We could use complete LC card copy. No variation would be necessary nor would any be tolerated.
- "B. This meant that the processing of any title with LC copy could be done by non-professional assistants. We call them Standard Catalogers.
- "C. Processing can be completed much more quickly and thus books get to the shelves more quickly.
- "D. The development of library networks and building of machine-readable data bases make it even more desirable for local processing to conform to the national norm, i.e. the Library of Congress. It is indeed possible to be part of such a network and still classify by Dewey but it is more difficult and less desirable.

"E. The Dewey classification is slow to include new subject schedules. This compels the library to develop such schedules at the expenditure of time only to find them not compatible with new editions of the Dewey classification. Other changes in new editions of Dewey would result in much reclassification if the library follows the new edition. If it does not, it then finds itself deviating more and more from what the current Dewey classification is supposed to be. While LC cards usually give the Dewey subject classification, no book number is given. Thus each title must have skilled individual attention for assignment of book number and checking of the LC-produced Dewey number to see if it fits the local situation.

"F. Many other reasons can be cited, but our decision was made on the basis of quicker and less expensive processing, thus enabling us to get the book to the user with as little delay as possible. In a large research library, the call number is chiefly a finding device. Please note our statistics given (in Table 1). You will see a sudden increase in new titles and volumes cataloged in 1970/71. This was the result of a special project of getting rid of a large backlog by using standard catalogers. Such assistants can be hired and trained in a relatively short time. Such a project would not have been possible if each title had had to be handled by a professional cataloger."

Methodology

After the decision was made to reclassify, methodology was considered. The need for automation was recognized, but technology had not produced the means. Inquiries by staff members at the time indicated that library automation adequate for the project would not be available in the near future. Therefore, the project was started manually.

Reclassification. Reclassification was started in the science division of the collection in 1968. Holdings for the JUL collection numbered 482,482 on July 1, 1968. This

number increased to 620,016 as of July 1, 1973. The reclassification project is presently continuing and no firm date of completion is projected.

Reprocessing. The following table gives the total number of volumes reprocessed (combined recataloging and reclassification) and the number of new volumes cataloged during the period from the beginning of the project to July 1, 1973.

Table I

A. Regular Catalog Department						
	Recataloged/reclassified			New Cataloging		
	Titles	Volumes	Pieces	Titles	Volumes	Pieces
1968/69	6,566	8,750	55	22,709	28,279	57,500
1969/70	6,941	28,278	6,664	29,458	31,504	29,327
1970/71	2,697	22,982	7,167	43,262	43,431	31,459
1971/72	7,175	23,822	8,241	28,425	29,073	18,459
1972-73	1,948	3,742	1,951	18,268	20,476	13,193
	25,327	87,574	24,078	142,122	152,763	149,938
B. Special Reclass Unit						
1972/73	961	20,366	1,224			
Grand Total	26,288	107,940	25,302	142,122	152,763	149,938

During the 1972/73 school year, a "Special Reclass Unit" was organized to give full time to the reclassification project (previous to this time, reclassification was handled by the regular catalog department). Line B in Table I includes figures for the Special Reclass Unit's work through December 1973 (as indicated earlier, figures for the rest of the table are complete through July 1, 1973).

Time. Figures are not available for total time expended in reclassification to this time, but some sample time studies were conducted and have provided the information in the following statement and in Table II.

"These (time study) operations will vary in time at various locations, because of size of catalog, experience of help, distance from processing area to catalog and stacks, type of material and number of places in which numbers need to be changed (i.e.) A circulation routine which requires cards and pockets for each book will add to the time. These times were arrived at by actual observation of experienced student assistants who performed the tasks, and an average was made of their recorded times.

"Pulling catalog cards (scattered throughout Public Catalog) - 1 1/2 minutes per card
 Typing complete book plates - 1 minute per plate
 Typing outside Se-Lin label - 1 1/2 minutes per label
 Actual handling of each book, for changing numbers in all locations - 5 minutes per volume
 Typing double sets of cards for books - 6 minutes (not including preparation of master copy)
 Pulling shelf card - 1 minute per card
 Correcting master copy - 3 minutes

"This does not include variables such as locating missing volumes, looking for misfiled cards, waiting for someone else to move out of the way at the catalogs, etc. By setting up a standard way to deal with missing items... and by such procedures as lumping all filing, except for main entries and shelf cards, we can shorten some of the steps. Such tasks as mounting up cards for Xeroxing, getting volumes from stacks, returning them to shelves, etc. must be lumped into the overall time. After trying several approaches to handling monographic material, it seems that a safe estimate would be: 30 minutes per title for a book which needs one set of cards (and) 45 minutes per title (plus some dead time while cards are being reproduced) for books which will require 2 complete sets of cards."

Table II summarizes the average time per volume for man hours spent in reclassification tasks.

Table II

Serials	Monographs
4.2 student hours per title	.5 hours per title with
4.5 combined student and classified hours per titles	one set of cards
.26 hours per volume	.75 hours per titles with two sets of cards

It was found that the average title had: 17.01 volumes, 23.70 items (including volumes and pieces), 18.48 cards prepared and filed, and 4.3 cards removed permanently.

Special Problems

Special problems encountered at JUL seemed to center around two matters: branch library operations and the extensive number of unbound pieces. Branch libraries are maintained for science, the observatory, the Graduate School of Management, the Divinity School, and some service is extended to the Peabody library. Transfers and other forms of internal manipulation of materials within the library structure present complications. Distances between catalogs and various work areas in different buildings add to the time element and to the work load.

Space needs create additional problems within each of the buildings. Occasionally, materials have to be temporarily stored before moving them to their final destination. This compounds handling time and problems. Work areas must be made available and space must be found for each of the various functions.

The number of currently received serials add to planning problems. A "cut-off" procedure for analyzed serials has been developed and has proven helpful.

Suggestions

Suggestions for other libraries are listed by JUL for those who may be contemplating reclassification.

- "I. If possible, have a clear understanding as to whether part or all of the collection is to be reclassified. This will affect such routines as the "cut-off" series, which would be handled differently if they are used only as a short range measure.
- "II. Before beginning project, set as many standards as possible in the use of the LC numbers, as to format, special locations, routing of material by classification, handling of missing volumes or copies, etc.
- "III. A decision must be made as to whether recataloging is done by regular catalog staff, or within the unit, and even as to whether any recataloging will be done. The current quality of cataloging, especially serials, and the backlog of title changes or entries to be closed will have a major influence on the speed and quality of the reclassification. If there is no need for "editorial" work, the entire process is done more efficiently.
- "IV. The supervising reclassification staff, whether as a separate unit or as part of the regular processing departments, must have a thorough understanding of the inter-relationships of the various operations within the library. Reclassification has a traumatic effect on public services units, at best - and can make their work completely impossible if they are not consulted in the planning of the operation. In addition to this, any change in entry or classification can affect binding and financial record keeping, so all of the implications of any change must be considered.

- "V. It has been our experience that much of the work to be done, in as far as pulling and filing cards, erasing call numbers, and changing of numbers in volumes, is of such a repetitive nature, that a much better job is done by people who are working less than full-time. However, it must be realized that supervision and scheduling the work and equipment use for this type of part-time help requires a large amount of time, and a talent for organization, as well as a complete mastery of current technical processing procedures of the particular library.
- "VI. In setting up any reclassification project, the choice as to whether to work "out-of" particular blocks of the Dewey classification, "into" a given LC classification, or with a particular departmental or special collection as a beginning must be made in the light of the individual situation. Space requirements, a move to new quarters, such projects as our "Serial Project/Audit" and the need to report it, or other criteria may be the governing factor, but there should be a plan of operation at the beginning of the project.
- "VII. We have learned, as have many others, no doubt, that follow-up procedures for missing volumes may best be handled by routing the materials through the regularly established channels for flow of material. Once the "reclass task force" has passed by a snag, chances are that it will be misrouted or lost if this is not adhered to - the feeling that the item may get located in time to be handled with remainder of like material is more "wishful thinking" than realism.
- "IX. In all cases, beginning with standing orders and subscriptions, and closing the old classification to addition must take precedence. In each section of the classification, as many actual LC numbers as possible should be used before assigning original numbers. This gives a broader based shelf list, and a better plan for speedy reclassification."

PART II

The reclassification project at Western Kentucky University was used as an example of automated reclassification. The information used here is based on interviews with WKU personnel and the WKU project report entitled On-Line Cataloging and Circulation at Western Kentucky University: An Approach to Automated Instructional Resources Management.

Rationale

Rationale for the reclassification is indicated in this statement of proposal and the following statement of rationale.

Statement of proposal. "In order that the University Libraries might maximize utilization of the services offered by National Library, improve services to students and faculty, and expedite processing and retrieval functions, the faculty of the Division of Library Services prepared a proposal containing feasibility studies and a cost analysis to convert to the Library of Congress Classification Scheme (LCC). The contemporaneous problems of (1) the quantity of recorded data available, (2) the inadequacy of the existing classification system, (3) the cumbersome manual methods of records and cataloging, and (4) economic considerations resulted in an appraisal of current practices. The problem was posed to identify the most effective means of meeting these contemporaneous problems. The factors of increasing costs of acquiring and cataloging library resources along with greater demands for manpower to retrieve and circulate materials were considered.

"The Division of Library Services proposed to the administration the advantages of reclassifying the collection at the earliest possible date as the task of converting such a sizable collection compounds with each year of delay. The proposal was twofold: (1) a request to classify all new acquisitions in LC and (2) to reclassify the existing collection."

Rationale favoring the change: "Many faculty members have a decided preference for Library of Congress Classification and the materials in most academic disciplines logically adapt to the larger and expandable scheme.

"Librarians favor the change. It has a decided advantage for large collections and the speed and accuracy of processing and consequently, the economy in technical processing is desirable.

"The change would bring Western's operation in line with the practices of the National Library in Washington. This would permit future coordination with new programs under development in the Library of Congress, especially those which involve automation. The MARC Project, through which Machine Readable Cataloging tapes become available, would enable Western to participate using LC classification with ease when presented in computer based language.

"Bibliographic search would be facilitated. Students, faculty, and staff would be able to use certain prepared bibliographic tools such as the National Union Catalog which lists titles along with the assigned LC call number. The library user could then proceed directly to the shelves using the notation listed.

"The rapid increase in library holdings had necessitated an increased rate of processing books each year. Using LC copy, the cataloging functions would be greatly simplified and Western could, without question, accept the classification and subject headings assigned by the catalogers in the National Library. This would then force the professional staff in the Division of Library Services to perform original cataloging on books which, because of age or place of publication, have not been cataloged by the Library of Congress."

Methodology

Methodology began with a general statement, followed by provision of hardware/software needs, training of workers, and implementation.

"Certain broad generalizations regarding classification were made and adopted by staff members: (1) in converting to LC, the cataloging personnel would accept without question all LC descriptive cataloging

information and all classification numbers listed on proof slips, cards from the Library of Congress, National Union Catalog, and/or other sources, (2) when cataloging continuations or serials, the entire series would be processed immediately, and (3) every endeavor would be made to process all new acquisitions concurrently with the reclassification project. In an attempt to expedite this last function, the Division of Library Services studied several possibilities to accelerate the processing of new books. Accepted were the services offered by Information Dynamics Corporation (IDC), which supplies in micrographic form IC proof slips which are updated regularly and indexed in a manner which permits rapid retrieval. The technical processes operation was able to obtain through these services hard copy print-outs for many of the new acquisitions and for titles processed by IC since 1953. This service eliminated the waiting period for card sets from the Library of Congress. It further provided a rapid search for titles which had been processed previously by catalogers in the Division who did not have IC copy at the time the book was received by the University. Home-made cards generated at that time by catalogers did not possess consistency in subject-headings and did not, of course, have IC class numbers assigned. The service of IDC was of great help in the reclassification of the collection."

Hardware/Software. Hardware facilities included a computer that was located in the university computer center and was shared with other computer users on campus. On hand at the beginning of the project was an IBM 360/40 processor and 2314 disk storage device, card reader-punch, line printer, and tape drives. Added later were "Video, typewriter, and badge-card reader terminals, and printers plus associated control and communication hardware to support this network." There were eventually ten IBM 2741 terminals installed in the library. IBM 1031/1033 data collection terminals were located in the main library and the science library. On-line capacity included 100 hours per week for the main library and 70 hours per week for the science library. A total systems approach was utilized for all university computer needs.

The IBM ATS/360 (Administrative Terminal System/360)

Software Package was slightly modified for the reclassification project. The only additional computer programs written were "those to manipulate the master records once they were stored in ATS/360. These programs are written in several languages, each language being chosen to best accomplish the job to be done. The computer center staff used combinations of COBOL, FORTRAN, ASSEMBLER, and MARCOS to write the needed programs."

~~Training~~ Training of workers included orientation to the Library of Congress classification and orientation to computer applications.

~~Orientation~~ Orientation in Library of Congress classification included librarians, library staff, and library science teachers. It was designed primarily for those in the cataloging department, but extended to all library departments.

At this time it was indicated that the following materials were affected by LC classification and would be classified immediately:

"(1) general monographs, (2) serials except periodicals, (3) science books, (4) juvenile collection and library science books, and (5) resources in other locations such as consortium and extension books."

There were other materials that were fully cataloged and would not be classified in LC. These included:

"(1) government documents, (2) audio-visual materials: phonodisc and tapes for the Dial Access Center, microtexts, portfolio, transparency, and other miscellaneous items, (3) periodicals, (4) Western Kentucky University theses, and (5) materials housed in the Special Collection in the Kentucky Library."

Orientation to computer applications covered the following areas. (1) In-service lectures. In general, these were designed "to avoid the general 'computer scare' that usually develops in personnel when computer applications are introduced into an organization..." (2) A data processing course following the regular course outline was taught with special emphasis on library applications. (3) ATS operator training was given to the clerical assistants in cataloging and to other interested faculty or staff members. The LEARN ATS Software Package was used for this training. (4) Proofreader training was given to those who were at various times involved in the proofreading process.

A total of 32 ATS operators (including 4 replacements) were employed during the 1970-1972 time period. Twelve librarians contributed at various times to proofreading. In May of 1971 eight full time proofreaders (non-librarians) were hired.

Implementation. The project began in January 1971 and was completed by January 1973. There were 350,000 volumes on hand at the beginning of the project and approximately 20,000 new volumes were received each year. Thus, holdings numbered approximately 390,000 volumes at the completion of the project.

Other facets of methodology will be summarized under two categories: (1) cataloging, and (2) circulation.

(1) Ten factors relating to cataloging were identified.

Master Record Fields Identification. Elements of the main entry were identified and found to closely follow the MARC II

format. The primary purpose of coding was "to allow programmers in the computer center to format in appropriate order the elements of the pockets and labels, book catalogs, card catalogs, and the circulation book record."

Master Record Coding Structure. "Three character tags were assigned to each of the data elements which were felt to be essential not only to the reclassification project but to future automation activities."

Data Processing Procedures. Capacity limits of the ATS/360 system, timing, and work schedules were coordinated for maximum efficiency.

Input of LC Shelflist (Pilot Project). There were 13,000 titles previously classified in LC that were assigned sequential document numbers and placed in the system.

Reclassification. Main entry, see reference, and micro-print cards were manually pulled and assigned unique 6 digit document numbers. ATS input operators copied from these LC printed cards omitting price, publisher number, and Dewey classification. The computer used the document numbers to print a list in Dewey call number order. This list was used to check, and add, additional information such as number of titles. Reclassification information was added later to complete the computer files.

New Book Processing. New books were assigned LC information or given (if necessary) to librarians for original cataloging and entered into the normal work flow.

Serials. The tag "srl" was added when the main entry was manually pulled. This distinguished serials from monographs.

Catalogs. The author-title catalog was printed three times during 1971-72. One copy of each went to the card catalog area and one to technical services.

Labeling. Using the master records, the computer center printed labels, pockets, and circulation cards in call number order. "Seven production lines were established. Depending upon production requirements, one or two lines manned by six students assigned to the workshop program cut labels and pockets preparing them for the relabeling lines. Five or six lines manned by six students and one full-time library staff member prepared the books for delivery to the stacks crew. The relabeled books were sorted and temporarily shelved in the labeling area in LC order. When a batch in a particular class had accumulated, they were placed on book trucks and transported to the assigned shelf area in the divisional collection... production relabeling rate was about 1000 volumes per line per day."

Current Data and Book Processing Procedures. There were seven steps in the processing. 1) Input into master records with a proof sheet produced for each days work. Needed corrections were indicated on the proof sheet. 2) Corrections were made from proof sheets. 3) Each batch was edited and re-edited until clean. Here, the computer center produced the labels, pockets, and book cards. 4) Books were labeled. 5) After labeling and corrections, the edit cycle was repeated until clean. 6) Batch was transferred from ATS storage to magnetic file. Record was added to circulation file. 7) Catalog cards were produced for catalogs.

(2) Circulation procedures were greatly enhanced by the automated system at WKU. The on-line circulation system was a by-product of the reclassification project. In an effort to avoid duplication of files, the circulation system was integrated in file usage with the registrar's student records and with the business office payroll records. Selected bibliographic information was supplied from library files. Privileged information was prevented from transferring from one of these areas to another by the internal security capabilities of the computer programs.

Circulation information on file and available for library purposes is indicated in the following lists. (1) Bibliographic information: a) main entry, b) title, c) dates, d) LC class number, e) edition, f) Romanized titles, g) serial, and

h) incomplete call numbers. (2) Borrower information: a) check out date, b) length of loan in days, c) patron ID, d) first hold patron ID, e) second hold patron ID, f) number of current holds, g) number of cumulative holds, h) usage counts, i) permanent location of the book, j) the "now" location of the book, and k) temporary length of loan.

It should be obvious from the preceding that data collection and inquiries relating to book location were expedited by the on-line system.

Suggestions

Suggestions for other libraries were outlined by WKU in three words: planning, support, and motivation. It was strongly emphasized that each of these is an absolute necessity in order to complete a project on this scale.

Findings

One of the major areas of interest in beginning this study was the matter of cost. This information would be extremely useful in planning a reclass project. However, this data seems to be the most difficult to secure. JUL has no information available and WKU indicated that the information would be difficult to secure.

In terms of actual work load, the manual project at JUL reprocessed 107,940 volumes and added 152,763 new volumes for a total of 260,703 volumes processed during the six-year period 1968-73. The computer automated project at WKU reprocessed 350,000 volumes and added 40,000 volumes for a total of 390,000 volumes processed during the two-year period 1971-72.